in mind, deriving load factors for axial and lateral resistance of drilled shafts in North Carolina soils was undertaken in preparation for the transition.

In 2002, Rahman et al. used data collected from the NCDOT archives to propose resistance factors for axial capacity for driven piles. Parts of this work also resulted in the dissertation work by Kim (2002). These studies compared three geotechnical design methods for driven piles to load capacities from static and high strain dynamic load tests. The result was resistance factors for a variety of geologic situations around the state. Most of the tests were in the coastal plain geologic region.

The resistance factors for axial compressive resistance of drilled shafts outlined in AASHTO (2006) range from 0.40 to 0.60 with a limit of 0.70 depending on the method used to estimate the capacity. Capacities estimated from static load tests in compression, which formed the basis for estimating the resistance factors, are dependent on the number and variability of the sites in which the shafts are installed. Geotechnical resistance for horizontal loading has a recommended resistance factor of 1.0.

Since a framework for evaluating resistance factors is in place for North Carolina soils based on load testing, there is also a need for a similar framework for evaluating resistance factors for drilled shafts based on load tests. However, static load tests for drilled shafts are often cost prohibitive. As such, other methodologies using cast-in-place hydraulic load cells (Osterberg, 1999), explosive driven reaction weights (Mullins et al., 2002) or dropped rams (Robinson et al., 2002) are increasingly popular for estimating the axial and sometimes lateral capacity of drilled shaft foundations. While this report will not compare these methods' efficacy at estimating the loads that would be measured from a conventional static load test, the results from some of these tests will be used to develop resistance factors and calibrate them to existing AASHTO and other design methods typically used by NCDOT.